

April 2, 1969

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ATTN: Ed D.

Dear Ed:

I received your comments from John C. during his visit to [] on March 25. I think they are very well taken and I would like to review them with you.

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Page 1-3. This one-line summary of our work for you was not written by me, and I agree that it does not adequately describe the program. I suggest the sentence read: "6. A spectral (2 color) microdensitometer study of edge images."

I believe you would like our report bound separately, and therefore I wonder if this description should appear in Chapter 1 at all.

Page 7-2. There seems no need for the quotations and I agree they should be deleted.

Page 7-6, Line 7. This is a typographical error. The phrase should read, "which have lower development rates."

Page 7-6, Para. 7.3.3. The differential change refers to the separation of the blue and red densities with distance along the edge. I agree that it is confusing and the best thing to do is simply delete both words "differential" when they appear. I think the idea is better conveyed if the very last two lines of the page read "but a change across the edge associated with edge structure does not occur."

Page 7-9. The error that 1μ should read 10μ is noted.

The final paragraph of this page, and the following paragraphs on 7-10 do need revision. I suggest the following:

GROUP-1
Excluded from automatic downgrading
and declassification.

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Reg 18771

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"In this experiment, we are looking for changes in spectral transmission of the image silver in the sample. Therefore we must be sure to correct for spectral effects that may appear in one beam of the instrument and not the other. The balancing wedge in the balancing beam continuously varies in density over its length, and the attenuating medium is colloidal carbon. Therefore we expect that the color ratio of this wedge will vary slightly along its length. This could account for some separation of D(400) and D(700) with density. But it could not account for the strong difference in color separation we observe for two samples that have about the same D_{max} , for example the samples of Figures 65 and 66. These effects are striking, and the difference between them could not be explained by a constant change of color ratio of the balancing wedge.

"The red illumination surrounding the jaws of the preslit in the sample beam would cause a response if seen by the HVT-R132 photomultiplier. However, the area of the preslit always overlaps the area of the scanning slit, so that the scanning slit should never see any red light. If some red light is scattered into the sample beam, it would augment the red transmission and decrease D(700). But as with the balancing beam effect, it could not account for the strongly different variation in color ratios of Figures 65 and 66 which occur at almost the same D_{max} , and therefore at almost the same degree of illumination from the sample beam.

"The film base of Plus-X is bluish for antihalation purposes. This blue base introduces a spectral component into the sample beam that is not present in the balancing beam. To cancel this out, in a comparison of D(400) and D(700) curves, we normalize the two curves at D_{min} , so that a change in color at densities above D_{min} results from silver color only."

You question is two filters were used in each of the sample and balancing beams. This is so and is explained in paragraph 3 of page 7-9.

On page 3 of your notes, the n-1 sentence has been deleted in the rewrite. In Figure 70, the ordinate will be changed to read, "% Transmission or Response." Then we will label the filter curves, "Transmission of Ilford Filter-304, and -204." You correctly noted that we forgot to label the HTV response curve.

The error in notation of Figure 72 will be corrected.

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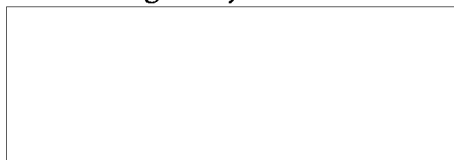
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I appreciate your careful reading of this report. May I call you in a week to confirm these revisions so that we may prepare the report in final separate form. Finally, I still feel that some study of the use of the adjacency edge, using special developers, as a mensuration tool, might have some merit.

Best regards,



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Director
Chemistry Department

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